ENVIRONMENTAL
Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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WD-BB-44 2008

Aquatic Plants and Their Role in Lake Ecology

What Types of Aquatic Plants Live in My Lake?
The most common types of aquatic vegetation are those which grow on the shoreland, those which grow partially within a waterbody (emergent), those which grow completely in a waterbody (submerged), and those which float on the surface of a waterbody. Even smaller plants called phytoplankton, commonly known as algae, are also present in our waterbodies. In most cases all of these vegetative types are present in a waterbody, creating a diverse aquatic habitat for a wide range of organisms. All types of aquatic vegetation are beneficial to a lake ecosystem provided that they are native to New Hampshire waters.

What Are the Benefits of Aquatic Plants?
Aquatic plants provide many of the same functions as terrestrial plants. Aquatic plants provide a food source, habitat, removal of carbon dioxide, and production of oxygen through photosynthesis. Plants act as the producers in an ecosystem since they produce their own food as well as food for the consumers or animals of that ecosystem. Aquatic vegetation provides food for tiny microscopic animals called zooplankton, fish, waterfowl, moose and other mammals, and in some cases humans.

Aquatic vegetation also acts as a habitat. Submerged vegetation provides a habitat for small fish which may seek refuge from predators. They may also use this vegetation as spawning beds to lay their eggs. Emergent vegetation provides a habitat for certain songbirds, or wading birds who may nest at these sites or use them as feeding areas.

Not all aquatic plants are nuisances which require removal. Native plants provide many benefits to the lake including spawning and habitat areas for organisms in the lake, as well as fishing and wildlife viewing areas for the residents around the lake.

The wildlife that resides on a lake, as a result of healthy habitats, adds to its serenity. Melodies sung by songbirds, the cry of the common loon, the chirping of frogs, dazzling dragonflies, the painted turtle sunning itself on a rock, and even the majestic herons would be threatened if it weren't for the food and habitat which aquatic vegetation provide.

Aquatic plants also provide several items which humans use. Some of these include rice, cranberries, blueberries, fiber for rope, reeds for caning, herbs, medicinal compounds, and aesthetic items such as flowers and colorful fruits and berries for decoration.

What Happens If There Are Too Many Plants?
As lakes age, plant abundance will naturally increase. However, increased human impacts can cause the aging to occur prematurely. Too much aquatic vegetation within a waterbody may become problematic. Those plants which are not consumed by zooplankton, fish, or waterfowl are consumed in large rates by decomposing bacteria. Excess decomposition by bacteria may deplete oxygen reserves in a waterbody. An increase in decomposition of plant material (in the lower layers of a lake) can cause a buildup of 'muck' at the bottom of a waterbody. This filling in, or 'aging' of a waterbody can cause the depth to decrease and the temperature to increase. A rise in temperature can cause more evaporation and even a lower amount of available oxygen for certain fish species. The addition of sand and sediment may also unnaturally fill a waterbody, creating shallow areas for plants (perhaps exotic) to establish.

What Can Be Done To Limit Nuisance Amounts of Plant Growth?
As a lake resident or concerned citizen, be aware of the activities that take place within the watershed. Nonpoint source pollution is the most common means of nutrient transport into a waterbody. Runoff from roads, septic systems, lawns, and agriculture may bring with it much nitrogen and phosphorus. In freshwater, phosphorus is a nutrient that limits plant growth. The lower the phosphorus levels, the fewer the plants. The best way to protect a waterbody is by protecting its shoreland by maintaining a healthy, well-distributed stand of trees, saplings, shrubs, and groundcover, which act as a filter for nutrients and sediments.

Aquatic Plants Are a Natural and Beneficial Part of Your Lake
Aquatic plants are found in most lakes and ponds in New Hampshire. They are a natural component and vital link to a healthy and diverse aquatic ecosystem. When aquatic plants interfere with human activities, the plants may be quickly viewed as 'weeds,' or nuisances that must be removed. However, complete removal of native plants is not recommended. Not only is it costly and impractical, and may need a permit, it is detrimental to a healthy lake ecosystem. In addition, if the lake is cleared of its native aquatic vegetation, exotic aquatic vegetation may start to colonize the lake. This occurrence has been proven in a number of New Hampshire waterbodies where disturbances to native plant communities have take place. Maintaining a balanced population of native plant life in a waterbody is the ultimate goal.

For more information about lake biology, please contact the DES Biology Bureau at (603) 271-3503 or go to www.des.nh.gov.